REMARKS

Reconsideration of the application is requested.

Claims 21-29, 31, 34 and 36-41 are now in the application. Claim 40 has been amended. Claim 41 has been added. Claims 29, 31, 34 and 36-40 have been allowed. Claims 30, 32, 33 and 35 were previously canceled.

Under the heading "Claim Rejections - 35 USC § 103" on pages 2-5 of the above-identified Office Action, claims 21-28 have been rejected as being obvious over U.S. Patent No. 6,498,418 to Rueger (hereinafter Rueger) in view of U.S. Patent No. 5,173,832 to Giorgetta et al. (hereinafter Giorgetta) and further in view of U.S. Patent No. 6,619,268 to Rueger et al. (hereinafter Rueger et al.) under 35 U.S.C. § 103.

Claim 21 of the instant application recites inter alia:

> comparing the first and second electrical currents for detection of a fault;
>
> integrating the first current over a given period of time resulting in a charge value;
>
> generating a diagnostic signal in dependence on the voltage in the actuator circuit, …..in dependence on an outcome of the comparing step and the charge value (emphasis added).

In claim 21, the first current is integrated resulting in a charge value. The charge value (Q1), the voltage (U_{c2}) in the actuator circuit and a result of a comparison between the

first and second electrical currents (I_{R1}, I_{R3}) are used for generating a diagnostic signal for indicating one of four possible types of faults as defined in claim 21.

On page 3 of the office action, the Examiner is believed to be citing Rueger et al. for teaching these steps. Rueger et al. teaches an integration circuit 800, 805 as noted in Fig. 11 and described from column 28, line 51 to column 30, line 40. The integrated charge quantity Q is used for determining the capacitance of the piezoelectric device as the capacitance of the piezoelectric device is affected by temperature. In essence the integration process is used to compensation for production and temperature induced affects on the capacitance of the piezoelectric device. However, Rueger et al. does not teach using the charge quantity Q in a fault diagnostic process. Therefore, Rueger et al. cannot teach these features of claim 21 of the instant application in which the charge quantity is used in a fault diagnostic process.

Neither Rueger nor Giorgetta teaches integrating the first current over a given period of time resulting in a charge value which is used for determining a short circuit across the actuator itself as recited in claim 21 of the instant application. In the instant application, the charge value Q1 can be used for determining a short in the actuator itself or to distinguish between a short circuit on the positive

terminal of the actuator and a negative terminal of the actuator as recited in previously added claim 40. Please note that the dependency of claim 40 has been changed to claim 21 as it was erroneously dependent on claim 29.

In summary, the teaching of an integrator as taught in Rueger et al., in which the charge value Q is used in capacitance compensation, does not teach using the charge value for fault diagnosis of a short circuit condition. As neither Rueger nor Giorgetta teaches using an integrated charge value Q for fault diagnostic purposes, the combination of the three prior art references (Reuger, Giorgetta and Reuger et al.) cannot read on claim 21. Put another way, the Examiner is believed to be arguing that the mere integration of a charge value as taught in Reuger et al., in which the charge value is used to determine a production capacitance tolerance, would lead one of ordinary skill in the art to use the integrated value in a diagnostic process in Rueger and/or Giorgetta for assisting in determining the existence or non-existence of a fault condition(s) as defined in claim 21. Applicants, respectfully, but strongly disagree.

New independent claim 41 has been added. Claim 41 is based on claim 21 with the additional feature of measuring a second electrical current flowing in the actuator circuit through a secondary winding of a transformer. Support for this addition

comes from claim 29 and as shown in Fig. 1 where I_{R3} is the current flowing through the secondary winding of the transformer. None of the above recited prior art references are believed to teach a method step of measuring the current flowing through a secondary winding of a transformer.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 21 or 41. Claims 21 and 41 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claim 21.

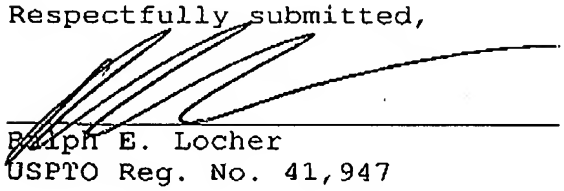
In view of the foregoing, reconsideration and allowance of claims 21-28 and 41 are solicited.

If an extension of time is required, petition for extension is herewith made. Any extension fee associated therewith should be charged to the Deposit Account of Lerner Greenberg Stemer LLP, No. 12-1099.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner

Greenberg Stemer LLP, No. 12-1099.

Respectfully submitted,



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